



# 2016 Manual for Erosion and Sediment Control Updates

# Why Revise the Manual?

- On December 18, 2014, the GSWCC State Board took no official action on the Sixth Edition (2014) of the Manual because of areas of concern and uncertainty
- For the calendar year 2015, both the Fifth (2013) and Sixth Editions of the Manual were available for use
- Part of a continuing process of revisions

# Major Changes: Testing

MANUAL FOR  
EROSION AND SEDIMENT CONTROL  
IN GEORGIA

*Fifth Edition  
2000*

MANUAL FOR  
EROSION AND SEDIMENT CONTROL  
IN GEORGIA

*Sixth Edition  
2014*

## Both in Effect

  
GEORGIA SOIL AND WATER  
CONSERVATION COMMISSION  
P.O. Box 8024  
4310 Lexington Road  
Athens, GA 30603  
706-542-2065  
706-542-4242 fax  
[www.gaswcc.org](http://www.gaswcc.org)

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[www.gaswcc.georgia.gov](http://www.gaswcc.georgia.gov)

GSWCC (Amended - 2013)

iii

Did not include  
performance  
evaluation

Included performance  
evaluation

# Revision Process

- The Carl Vinson Institute of Government at the University of Georgia was brought in this summer to help consolidate and reconcile the Fifth and Sixth editions, along with a representative from:



# Manual For Erosion and Sediment Control in Georgia



## **Chapter 1 - The Erosion and Sedimentation Act of 1975**

- Minor revisions were made to content
- Existing pictures were replaced with new ones

## **Chapter 2 – Sediment and Erosion Control Processes, Principles and Practices**

- Minor revisions were made to content
- Updated to include new Best Management Practices
- Existing pictures were replaced with new ones

# Manual For Erosion and Sediment Control in Georgia



## Chapter 3 - Planning and Plans

- Minor revisions were made to existing content
- Added two new sections:
  - ▣ “Coordination of Erosion and Sediment Control with Post-Construction Stormwater Management”
  - ▣ “Low Impact Development”
- The Erosion and Sedimentation and Pollution Control Plan has been updated to reflect requirements of O.C.G.A 12-7-1 and the NPDES Permits

# Manual For Erosion and Sediment Control in Georgia



## **Chapter 4 - Local Programs: Principles and Processes**

- Minor revisions were made to existing content

## **Chapter 5 – Sources of Assistance and Resource Information**

- Contact information and maps have been updated

# Manual For Erosion and Sediment Control in Georgia



## **Chapter 6 – BMP Standards & Specifications**

- Revised existing BMPs
- Added new structural and vegetative BMPs
- Remove/added mandatory and advisory conditions (should vs. shall) for BMP criteria

# Appendix A-2: *Joining the Equivalent BMP List: Background and Purpose*

- The allowance of the efficient addition of proven BMPs that are at least as stringent as the Manual for Erosion and Sediment Control recognizes the dynamic growth and technological advancements in the area of BMP development.
- The use of alternative BMPs whose performance has been documented to be equivalent or superior to conventional BMPs as certified by a Design Professional may be allowed (unless disapproved by EPD or the State Soil and Water Conservation Commission).
- The 2016 Manual includes a new process, found in Appendix A-2, in which new BMP's can be submitted to the GSWCC for inclusion on the Equivalent Best Management Practice List. This list is compiled from BMP's which have been previously approved by GSWCC and the GADOT prior to January 1<sup>st</sup>, 2016.

# Appendix A-2: *Joining the Equivalent BMP List: Alternative BMP Guidance*

1. One page summary detailing why the alternative BMP is equivalent or superior to the conventional BMPs found in the Manual.
2. Documented side by side testing (alternative BMP vs. conventional BMP) using the appropriate design requirements and specifications contained in the Manual.
3. Proof that the alternative BMP was previously installed and worked under conditions comparable to the environmental conditions of the proposed site. This can be documented with photographs.
4. All specifications including the design requirements and the procedures for proper installation and maintenance.

# Equivalent BMP Application Pre-notice



## Equivalent BMP Application Pre-notice

1. Provide a copy of the required checklist with a copy of the Notice of Intent form for each site on the disk or thumb drive.
2. Provide a copy of the plans by disk or thumb drive to the GSWCC/ Urban Program when each NOI is filed with the EPD.

Date submitted: \_\_\_\_\_ Signature of preparer: \_\_\_\_\_

*Please label the disk or thumb drive with the date submitted and project name. Project name shall never be the same. Pre-notice form should be sent return receipt mail to the following address:*

*GSWCC/Urban Program*

*P.O. Box 8024*

*Athens, GA 30603*

*If you have any questions contact the GSWCC/Urban program at 1-706-552-4474.*

# Appendix A-2: *Joining the Equivalent BMP List: Application and Removal Process*

- For a BMP to be considered for inclusion on the Equivalent BMP List, a **Design Professional** must have successfully completed the current process for Alternative BMPs as outlined by the GSWCC Guidance on at least **3** completed projects where EPD's Notice of Termination Form has been filed.
- **Geographic dispersion of the project sites is encouraged.**
- The following materials should be submitted to the GSWCC
  - An Application to be on the Equivalent BMP List and a **sample** of the BMP.
  - Three sets -- one for each time the Alternative BMP was used in three **separate** projects -- of the required documentation to use the Alternative BMP, based on the current approval process as outlined by GSWCC Guidance. Evidence of repeatable **bench** and **field** testing must be included as part of this documentation. Only **approved** ASTM standards or Overview Council-approved standards will be accepted for repeatable bench testing; **working test methods will not be accepted.**
  - Three sets -- one for each time the Alternative BMP was used in three **separate** projects -- of the Notice of Termination Form for each project involving the Alternative BMP.
  - A Certification Form signed by two individuals -- a Level II certified Design Professional **and** a Level 1A or Level 1B Certified Personnel -- who evaluated the BMPs performance in the field stating that the Alternative BMP performed as expected throughout the life of each of the three projects.
  - Three sets of installation photos -- one for each time the Alternative BMP was used -- of the Alternative BMP utilized in the three projects.
  - Three sets of after-storm event photos -- one for each time the Alternative BMP was used -- of the Alternative BMP utilized in the three projects.
  - Any post-storm event inspection records as well as inspection and enforcement records made by any federal, state, or local regulatory agency related to this specific BMP on this project.

# Equivalent BMP List Application



January 1, 2016

## Georgia Soil and Water Conservation Commission Equivalent BMP Application

Date: \_\_\_\_\_

Company Name: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Internet Address: \_\_\_\_\_ Toll Free # ( ) \_\_\_\_\_

Contact Person: \_\_\_\_\_ Phone # ( ) \_\_\_\_\_

Email: \_\_\_\_\_ Fax # ( ) \_\_\_\_\_

Address: \_\_\_\_\_  
Street or P.O. Box City State Zip Code

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Product Name: \_\_\_\_\_

Product Description: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

BMP Application (Must be BMP practice from the Manual): \_\_\_\_\_  
\_\_\_\_\_

Material Composition (Generic description): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Bench test meets requirements of one of the two following specifications: (2)

ASTM: \_\_\_\_\_ or Overview Council Approved test: \_\_\_\_\_

Dates of each NOI Filed:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_



January 1, 2016

### Digital plan submittal (Date submitted to GSWCC):

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

### Three sets of the following shall be submitted (One for each time the alternative BMP was used): (3)

1. Alternative BMP Guidance documentation (See page A-2-1 of Manual)
2. Notice of Termination (NOT)
3. Level 2 certification form
4. Level 1a or 1b certification form
5. Installation photos (photos must be labeled with dates taken and location)
6. After storm event photos (photos must be labeled with dates taken and location)
7. Post-storm event inspection records (include rainfall amount, and enforcement records made by any federal, state, or local entity)

### Manufacturer/Supplier shall attach the following information to this form in order to substantiate, verify or clarify its contents: (4)

- Specifications
- Drawings, sketches, pictures
- Installation instructions
- Material Safety Data Sheet
- Product/ Material literature
- Test data sheets

### Manufacturer/Supplier shall submit a sample of the product with the application that is physically mailed or dropped off to the GSWCC/Urban Program. (5)

### Equivalent Product Application Checklist

1. Completed application
2. Testing Documentation – ASTM/Overview Council Approved test
3. Equivalent BMP information
4. Product Specification sheets
5. Product Sample

### GSWCC may ask for additional information once application has been submitted.

Signature of preparer \_\_\_\_\_

*All the above information shall be submitted electronically by disk or thumb drive. The information must be labeled and categorized as per the above Equivalent Products Checklist. The information should be mailed or dropped off to the GSWCC/Urban Program at the following location:*

4310 Lexington Road  
Athens, GA 30603

*For more information contact the GSWCC/Urban Program at 1-706-552-4474.*

# Equivalent BMP Certification Form



January 1, 2016

## Equivalent BMP Certification Form

I \_\_\_\_\_ certify that \_\_\_\_\_ with the following

(1)

(2)

description:

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meets and fully complies with the procedure for applying for the equivalent BMP List. During the field testing I evaluated \_\_\_\_\_ on a test site with an open NOI until the NOT had

(3)

been filed. The product field test was in \_\_\_\_\_ with GPS coordinates of

(4)

\_\_\_\_\_. During this time the BMP performed as expected compared to the

(5)

conventional BMP.

(Signature) (6)

Valid Certification number (7)

1. Name of Person certifying product
2. Name of Product
3. Name of Product
4. City in which product was tested
5. GPS coordinates in decimal degrees as found on the NOI form
6. Signature must match number 1 above
7. Certification number must be a valid

***One certification form is required for each of the three sites with NOI's in which the equivalent BMP is being compared.***

# Appendix A-2: *Joining the Equivalent BMP List: Application and Removal Process*

- Any individual, local government, or agency may submit to the GSWCC a request that a BMP be removed from the Equivalent BMP List.
- The request for removal is encouraged to focus on complaints independent of issues of ordinary installation and maintenance of the BMP.
- An applicant with a BMP removed from the Equivalent BMP List may seek review of the GSWCC's determination from the GSWCC State Board.
- An Alternative BMP removed from the Equivalent BMP List may be returned to the list if an applicant successfully completes the Procedure for Applying for the Equivalent BMP List again.

## Appendix A-2: *Joining the Equivalent BMP List: Transition Period*

- The Equivalent BMP List became effective January 1, 2016.
- Applications for BMPs to be included on the Equivalent BMP list will be based on NOI'S submitted on or after January 1, 2016.
- GSWCC's approval of a BMP, however, does not ensure GDOT's adoption of that item into their QPL, design policies, or procedures.
- As of January 1, 2016, any product that seeks to be on the GDOT QPL List must first go through the Equivalent BMP process.
- The first update to the Equivalent BMP list will occur on or after March 31, 2016.

# Chapter 6 – BMP Standards and Specifications for Land Disturbing Activities

## Revised several BMPs

Tackifiers (Tac) - (Vegetative)

Sediment barriers (Sd1) - (Structural)

Construction Exit (Co) – (Structural)

Matting & Blankets (Mb) - (Vegetative)

Check Dam (Cd) - (Structural)

Channel Stabilization (Ch) - (Vegetative)

Temporary Downdrain Structure (Dn1) – (Structural)

Retrofit (Rt) – (Structural)

Temporary Stream Crossing (Sr) – (Structural)

# Chapter 6 - Revised BMP

Ss

Matting and Blanket (Mb) –No longer a stand alone BMP, it is now called **Slope Stabilization (Ss)**

- ▣ This BMP now incorporates:
  - Hydraulic erosion control products (HECP)
  - Rolled erosion control products (RECP)



# Chapter 6 - Revised BMP

Tac

Tackifiers and Binders  
(Tb) was changed to  
**Tackifiers (Tac).**

- Tackifiers are used as a tie-down for soil, compost, seed, straw, hay or mulch. Tackifiers hydrate in water and readily blend with other slurry materials to form a homogenous slurry.



# Chapter 6 - Revised BMP

Tac

- ❑ There are five types of Tackifiers. These blends take into account different blends of synesthetic and/or organic polymers.
- ❑ For general use, the tackifier must meet the specifications in Manual. To be used in other BMP applications, such as Slope Stabilization or Channel Stabilization, please refer to that BMP for specification.



# Chapter 6 - Revised BMP

Sd1



## □ Sediment Barriers (Sd1)

- The 2016 Manual clarifies the use of Type A,B,C Silt Fences in Non-Sensitive and Sensitive Areas.
- Type C will be classified as Sensitive and Type A and B as Non-Sensitive.
- Type C definition was amended to include wire, **or equivalent**, reinforcement.
- The 2016 Manual clarifies that mulch berms and compost socks are types of sediment barriers.

# Chapter 6 - Revised BMP

Sd1

- Two rows of type S sediment barrier is still to be used along all state water and sensitive areas but it **should be** placed at least 36 inches apart.
- Information is given about the static slicing and the traditional trenching method.
  - This information came directly from EPA.

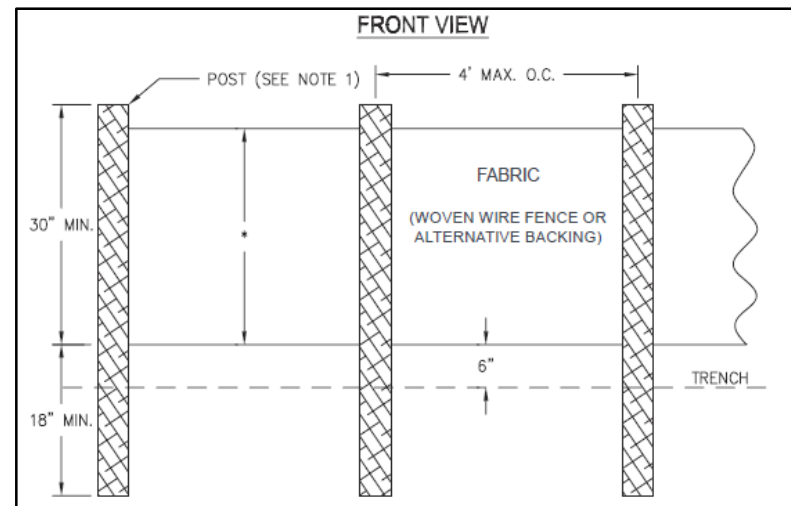
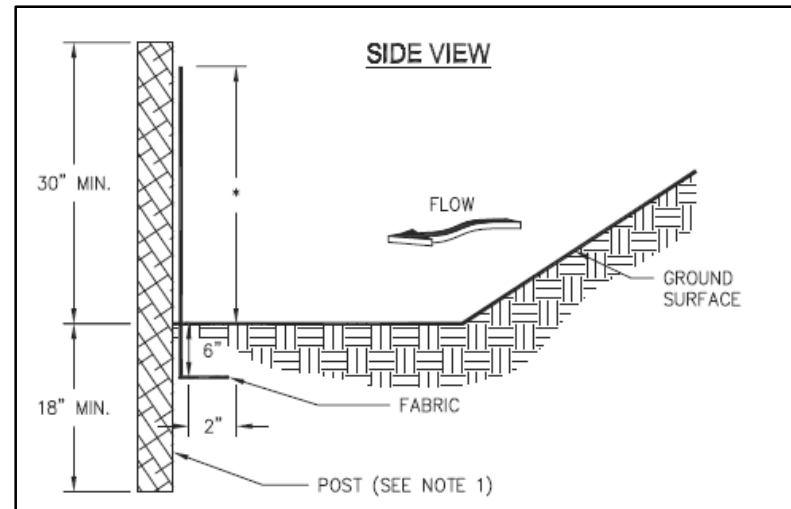
**Sediment barriers shall be replaced whenever they have deteriorated to such an extent that the effectiveness of the product is reduced (approximately six months) or the height of the product is not maintaining **80%** of its properly installed height.**



# Chapter 6 - Revised BMP

Sd1

- Sediment Barriers (Sd1) incorporate bmps other than silt fence for perimeter control.
- When a Sediment Barrier is used, the product height in inches for each barrier being used must be shown on the plans.
- Sediment Barriers must be maintained at half their height regardless of size.



# Chapter 6 - Revised BMP

Co

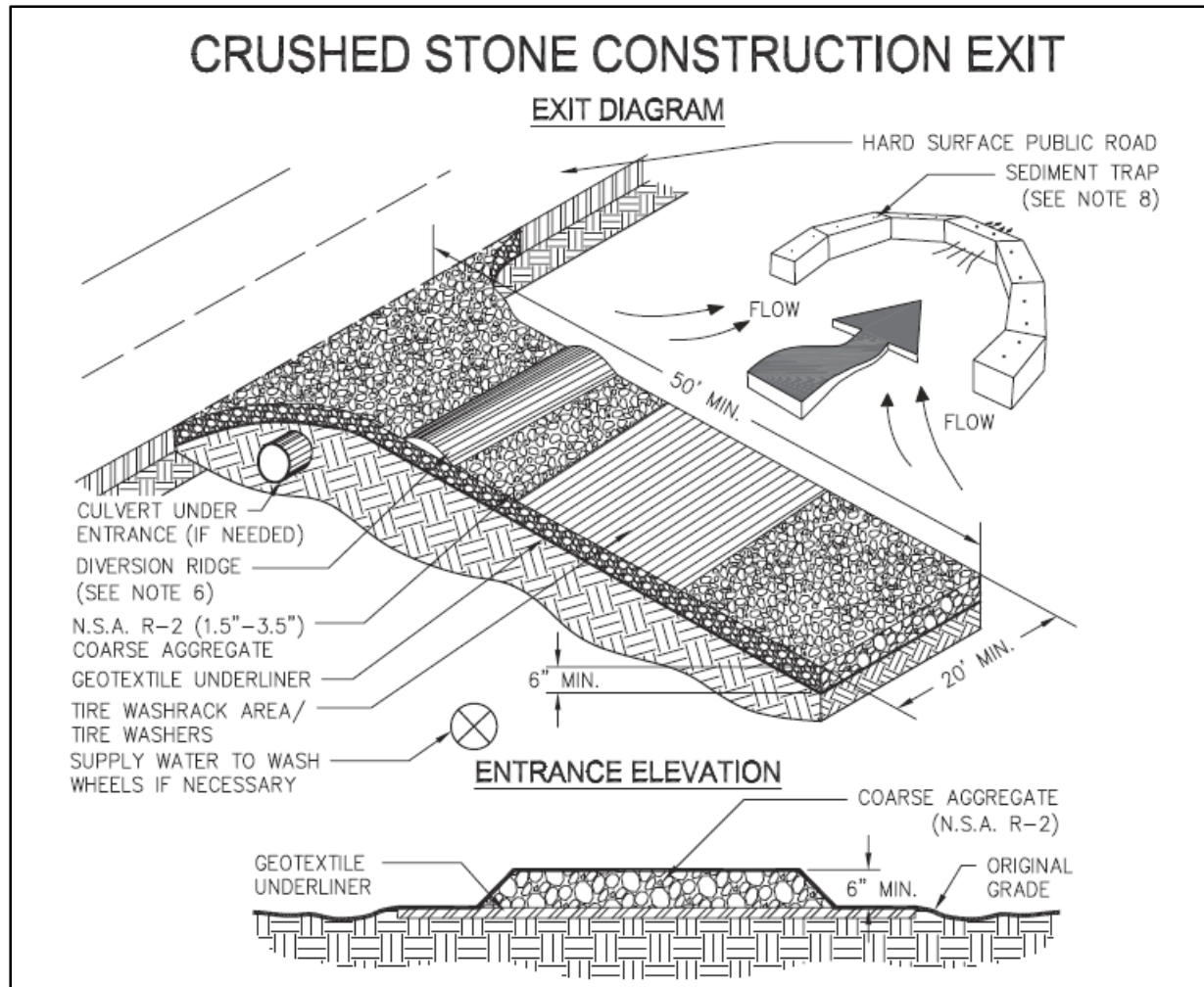
## □ Construction Exit (Co)

- ▣ Pad Length – The gravel pad shall have a minimum length of 50 feet. When the construction is **less than 50 feet** from the paved access, **the length shall be from the edge of existing pavement to the permitted building being constructed.**



# Chapter 6 - Revised BMP

Co



# Chapter 6 - Revised BMP

Cd

## □ Check Dam (Cd)

▣ Practices will be categorized as follows

- Stone Check Dams (CD-S)
- Straw-Bale Check Dams (CD-Hb)
- Compost Filter Sock (Cd-Fs)

### TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN

1. cfs in the channel/ditch that the check dam is being used in: \_\_\_\_\_

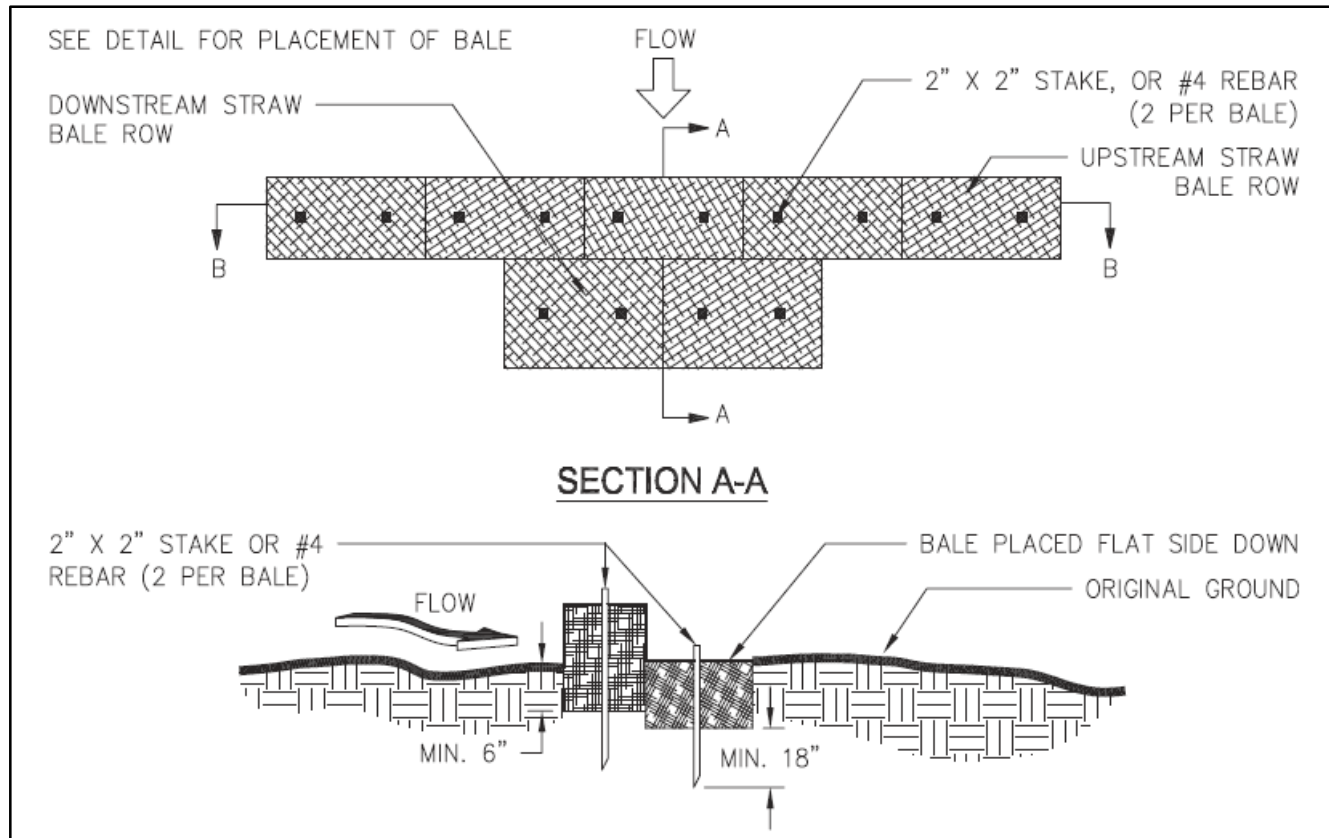
2. Above 2.0 cfs: Yes \_\_\_\_\_ No \_\_\_\_\_

3. If Yes, list BMP being used in conjunction with check dams: \_\_\_\_\_

# Chapter 6 - Revised BMP

Cd

- Most notable change in check dams is the installation of the straw bale check dam.



# Chapter 6 - Revised BMP

Ch

## □ Channel Stabilization (Ch)

Products will be categorized as followed:

Category 1 (0-5 ft/sec) Vegetated Lining with Blankets

Category 2 (5- 10 ft/sec) Vegetated Lining with TRM or Rip Rap Lining

Category 3 (> 10 ft/sec) Concrete Lining

\*equivalent shear stress can also be used.



# Chapter 6 - Revised BMP

Dn1

- **Temporary Downdrain Structure (Dn1)**
  - ▣ For slopes steeper than 2:1, slope drains should be placed **diagonally** across the slope, extending the drain beyond the toe of the slope. Curve the outlet uphill and adequately protect the outlet from erosion.

# Chapter 6 - Revised BMP

Rt

## □ Retrofit (Rt)

- “A device or structure placed in front of a permanent stormwater detention pond outlet **or roadway drainage structure** to serve as temporary sediment filter.”

## □ Silt Control Gate (Rt-Sg)

- May be used for temporary sediment storage on linear construction projects including roadway construction or maintenance, and utility line installation.
- Drainage area shall not exceed 50 acres.

# Chapter 6 - Revised BMP

Sr

## □ Temporary Stream Crossing (Sr)

### ▣ Revised language



“Temporary stream crossings should not be used on streams with drainage areas greater than one square mile (640 acres), **unless specifically designed to accommodate the additional drainage area by the design professional.**”

# Chapter 6 – BMP Standards and Specifications for Land Disturbing Activities

## Added seven new BMPs

Flocculants/Coagulants (Fl-Co) - (Vegetative)

Slope Stabilization (Ss) - (Vegetative)

Filter Surface Skimmer (Sk) - (Structural)

Seep Berm (SpB) - (Structural)

Temporary Sediment Trap (Sd4) - (Structural)

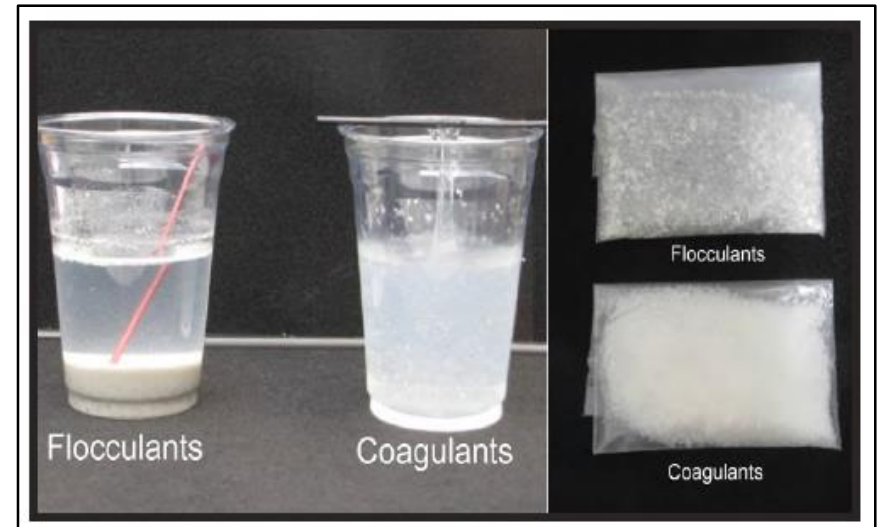
Turbidity Curtain (Tc) - (Structural)

Tree Protection (Tr) - (Structural)

# Chapter 6 New BMPs

FI-Co

- ❑ **Flocculants & Coagulants (FI-Co)**
  - ❑ formulated to assist in the solids/liquid separation of suspended particles.
- ❑ There will be no FI-Co on the Equivalent BMP List. Any product may be used as long as it conforms to the criteria set forth in the Manual.
- ❑ Only anionic forms shall be used.



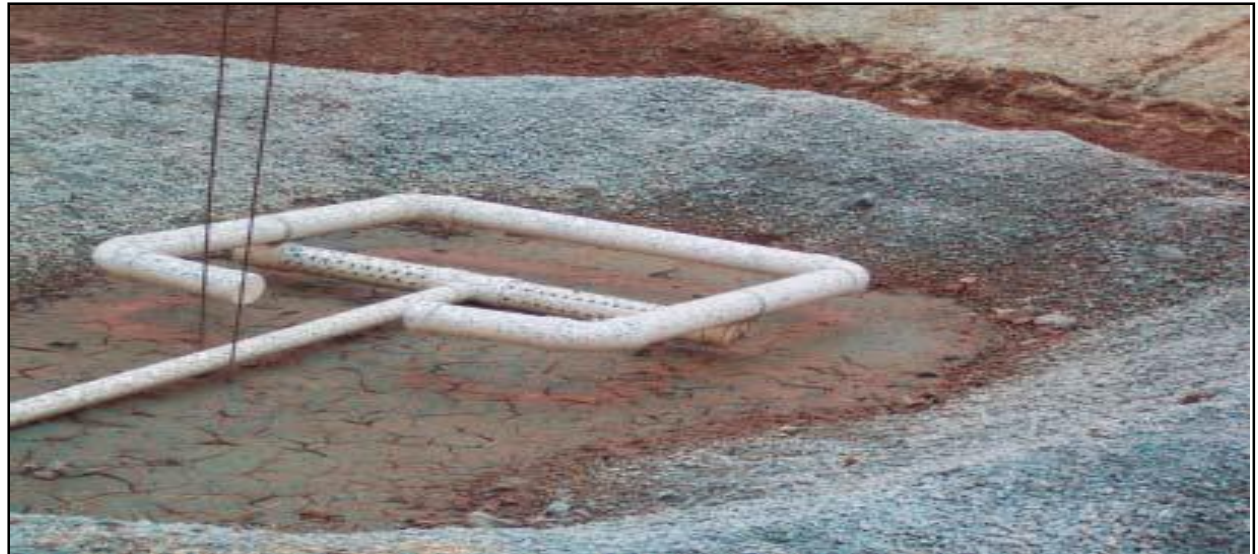
# Chapter 6 New BMPs

Sk

## □ Floating Surface **Skimmer** (Sk):

- A skimmer drains the water from the top allowing cleaner less turbid water to discharge from the ponding area.
- An emergency spillway is required when using a skimmer.
- It should not be used in conjunction with Rt.
- It can replace the riser pipe as the principal spillway.
- If a skimmer cannot be used, a rationale/justification must be given.

Skimmers are 1  
option to meet  
NPDES Part  
IV.D.3.a(3)  
requirement



# Chapter 6 New BMPs

Sk

- Floating Surface Skimmers require the following to be shown on the erosion control plan:
  - ▣ Pond, trap or basin size, length in **feet** (top and bottom) width in **feet** (top and bottom) and depth in **feet**
  - ▣ Time to Drain (**hrs**)
  - ▣ Skimmer Dimensions (orifice and head size in **inches**)



# Chapter 6 New BMPs

SpB

## □ Seep Berm (SpB)

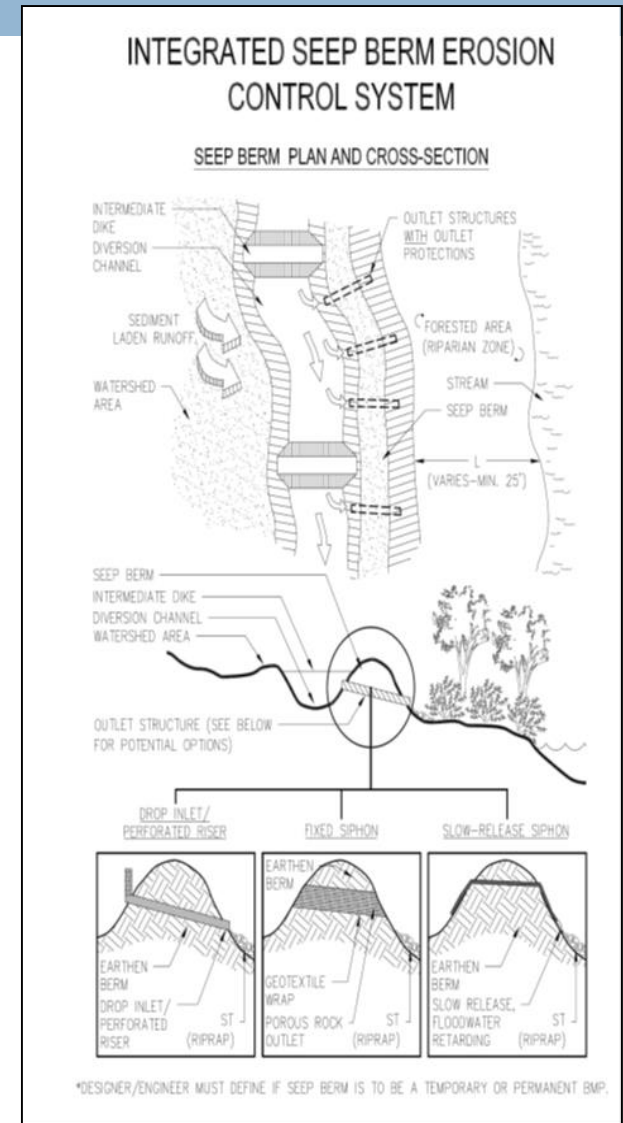
- A seep berm is a linear control device constructed as a diversion perpendicular to the direction of the runoff to enhance dissipation and infiltration of runoff, while creating multiple sedimentation chambers with the employment of intermediate dikes.
- To allow the 2 year storm event, 24 hour design storm to seep out while allowing larger flows to be diverted to a sediment storage area.
- If a fill berm is utilized it is very important that it has proper compaction and stabilization.
- Berm storage volumes can be figured as function of berm height and watershed gradient.



# Chapter 6 New BMPs

SpB

- Seep Berm require the following to be shown on the erosion and sediment control plan:
  - ▣ A. Top of Berm Elevation\*
  - ▣ B. Bottom of Berm Elevation\*
  - ▣ C. Top of Berm Width \*
  - ▣ D. Height of the Berm\*
  - ▣ E. Seep Hole Diameter\*
  - ▣ F. Distance from the top of the berm to the seep to be placed in accordance with the 2yr-24hr storm\*
  - ▣ G. Type of Seep
    - PVC      Metal      Other(specify)
  - ▣ H. Spacing of Seep Along the Berm\*
- \* shown in feet



# Chapter 6 New BMPs

Sd4

## □ **Temporary Sediment Trap (Sd4)**

- ▣ This BMP was added to provide sediment storage options for smaller sites.
- ▣ This is effective against coarse sediment, not silt or clay particles that remain suspended.
- ▣ All Sd4's are to be cleaned out at 1/3<sup>rd</sup> full
- ▣ Provides three options:
  1. Temporary Sediment Trap
    - Overflow
  2. Temporary Sediment Trap
    - Combination Outlet
  3. Temporary Sediment Trap
    - Rock Outlet

$$V = 0.4 \times A \times D$$



# Chapter 6 New BMPs

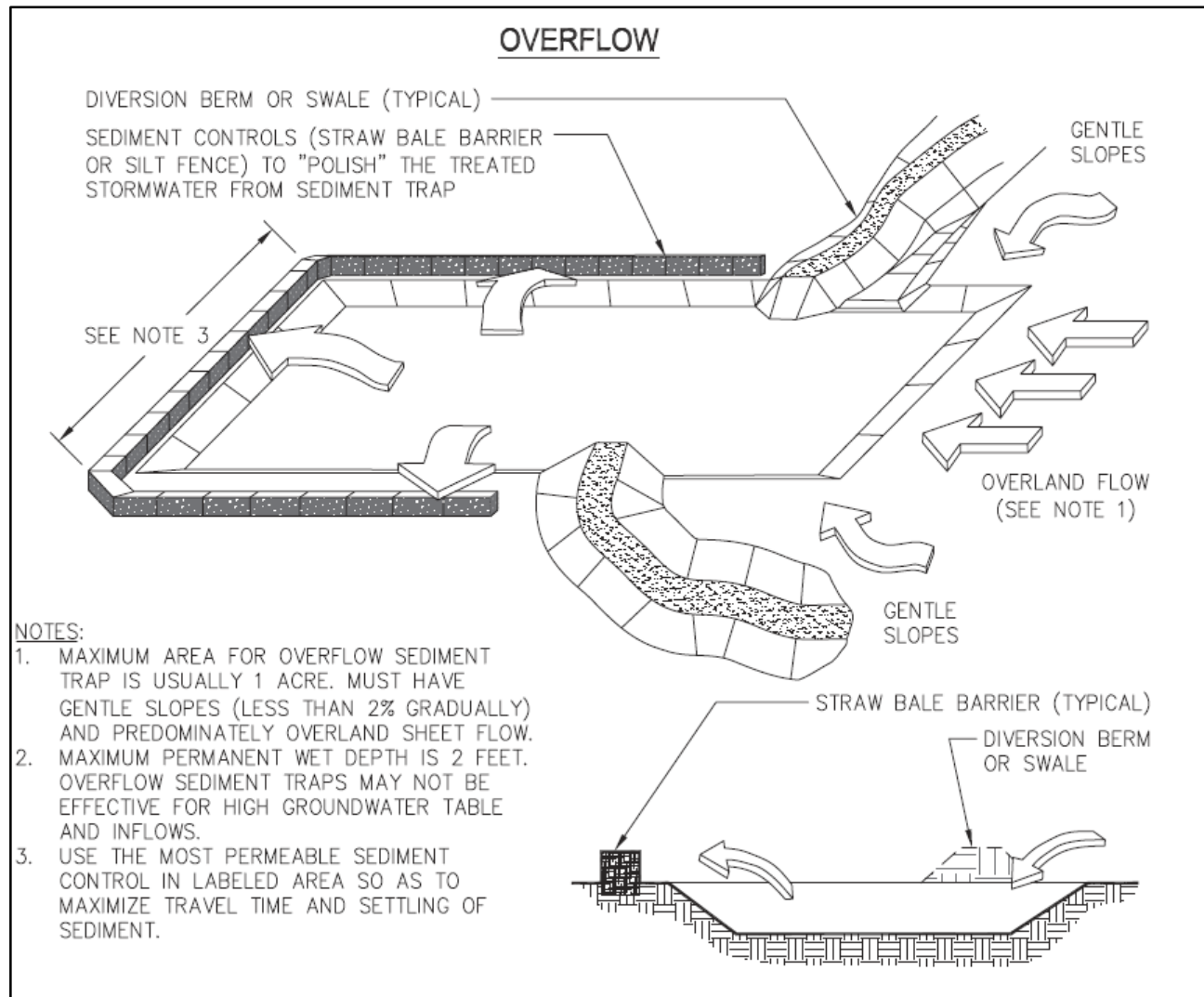
Sd4

## 1. Temporary Sediment Trap - **Overflow** (Sd4-A)

- An overflow temporary sediment trap is limited to small areas less than 1 acre.
- The maximum life span of an overflow trap is 6 months.
- Silt fence, straw bale barriers or grass filter strips are used to “polish” the overflow water as it leaves the sediment trap.

# Sd4-A Detail

Sd4



# Chapter 6 New BMPs

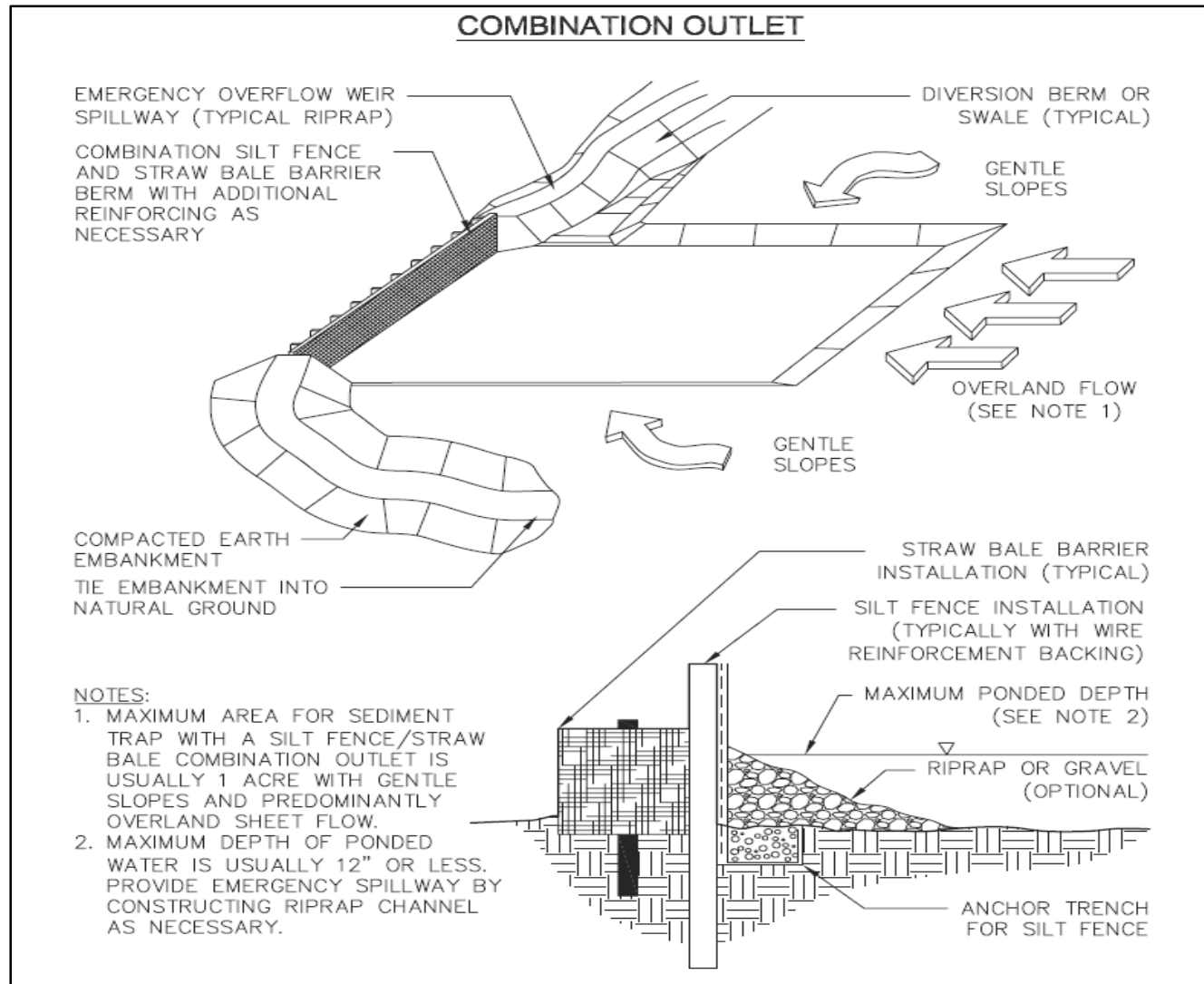
Sd4

## 2. Temporary Sediment Trap – **Combination Outlet** (Sd4-B)

- ▣ The combination outlet uses straw bales and silt fence to dewater the sediment trap.
- ▣ Proper installation and staking of the straw bales, and wire backing on the silt fence are required for the materials to resist 1 foot or more of ponded water.
- ▣ The combination straw bale and silt fence outlet is limited to 1 acre total drainage area, and has a life span of less than 1 year.

# Sd4-B Detail

Sd4



# Chapter 6 New BMPs

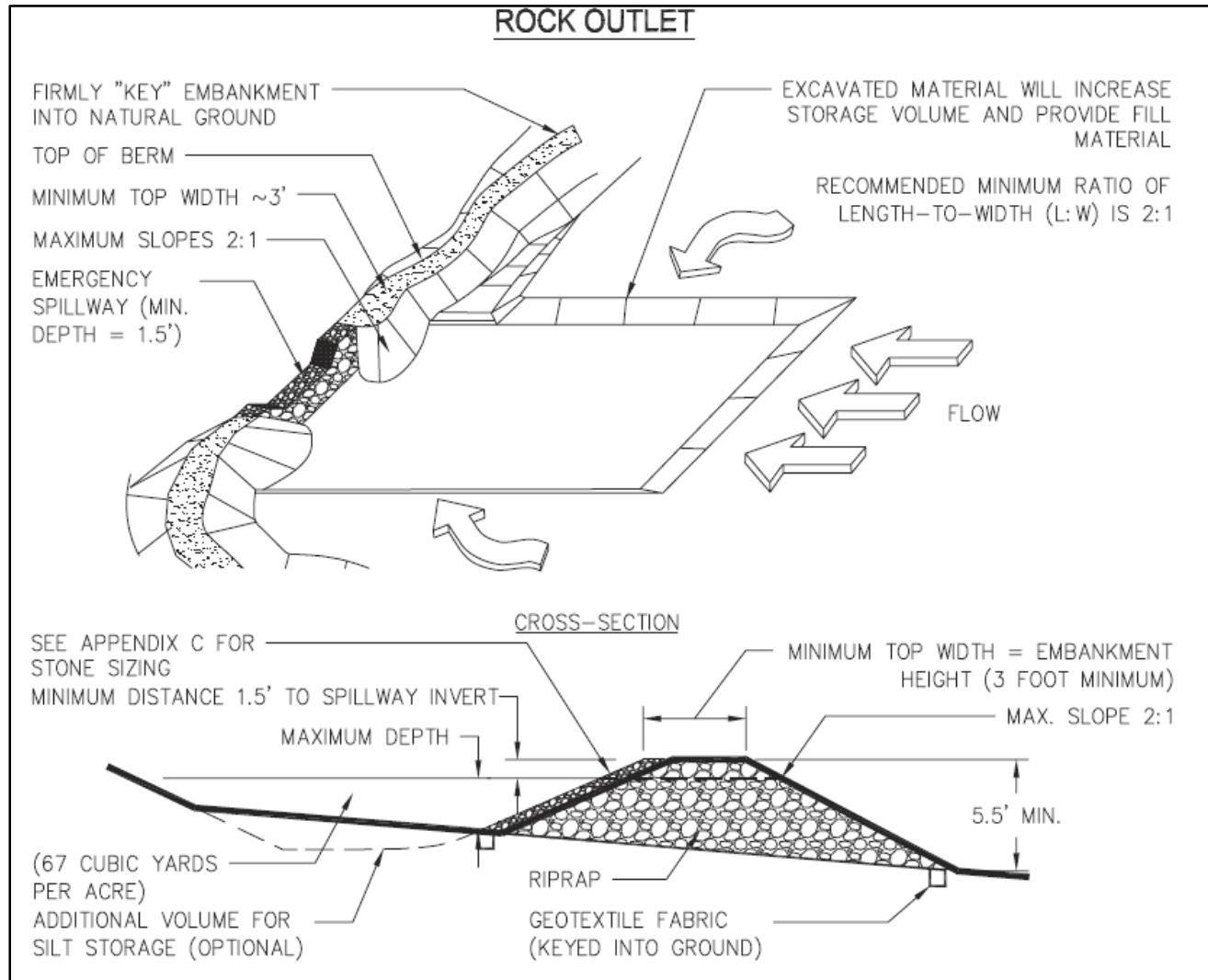
Sd4

## 3. Temporary Sediment Trap – **Rock Outlet** (Sd4-C)

- ▣ The rock outlet relies on filtering through layers of aggregate, rock or riprap material to dewater the sediment trap.
- ▣ It is the most sturdy of the sediment trap designs and generally requires less maintenance.
- ▣ It can be used for drainage area up to 5 acres and has a life span of 1 year.

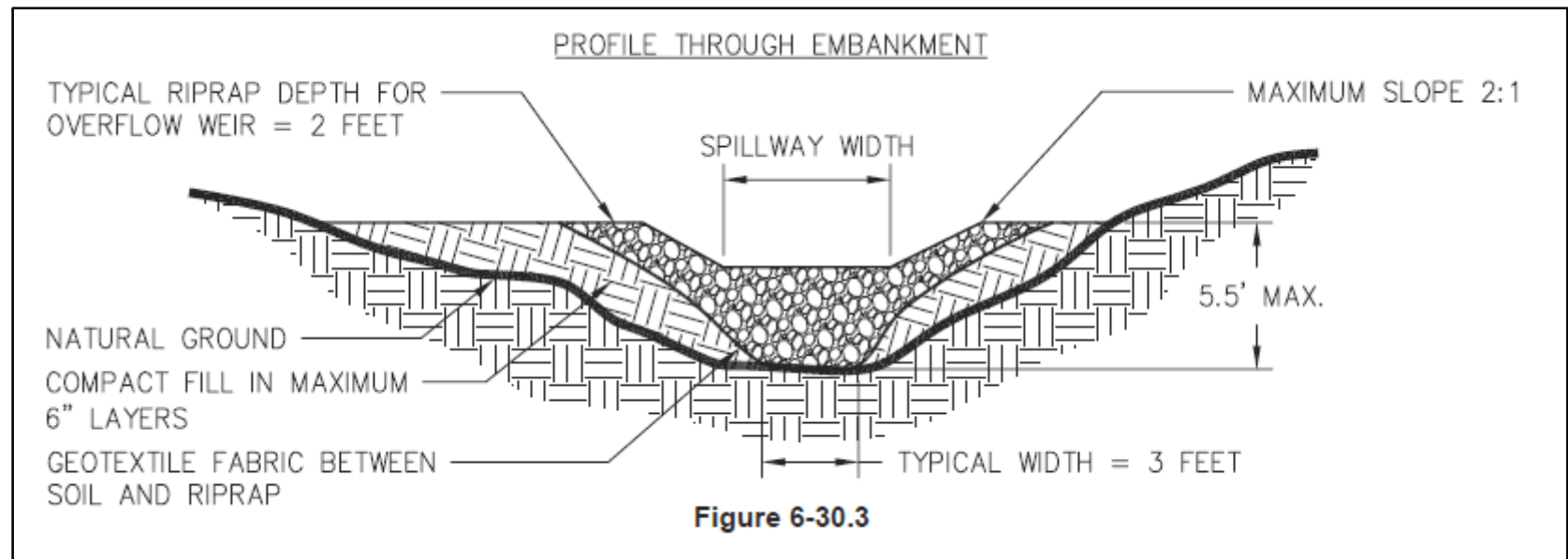
# Sd4-C Detail

Sd4



# Sd4-C Detail

Sd4



# Chapter 6 New BMPs

Tc

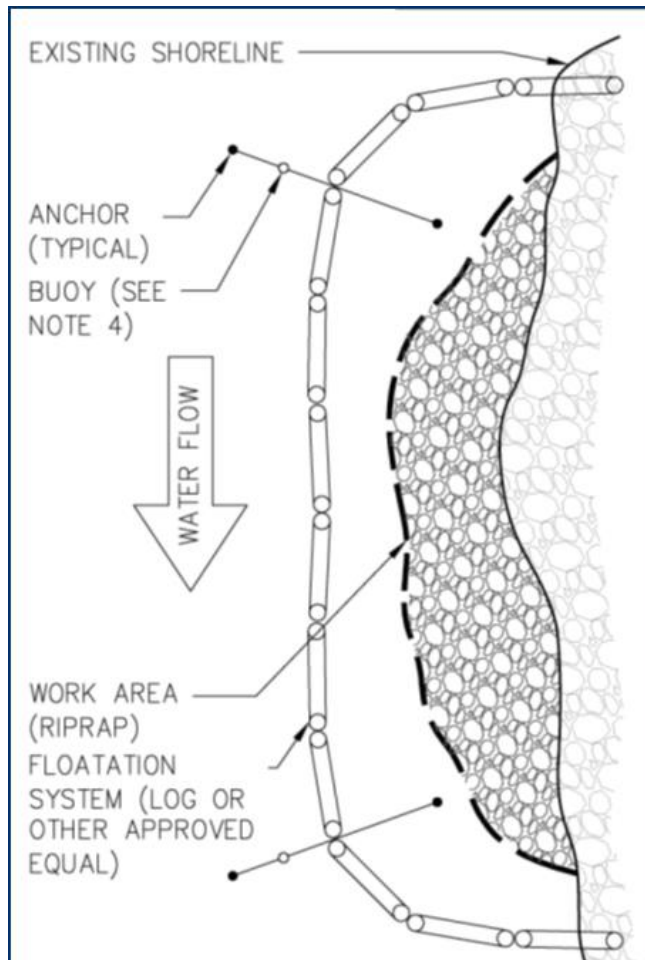
## □ Turbidity Curtain (Tc)

- A floating or staked barrier installed within the water. (It may also be referred to as a floating boom, silt barrier or silt curtain).
- Not to be used as sediment storage
- Turbidity Curtain is installed to minimize turbidity and silt migration from work occurring within the water or as a supplement to perimeter control BMPs at the water's edge.
- Silt or turbidity is confined to the area within the boundary created by the installation, such that suspended particles drop out of the water column over time.



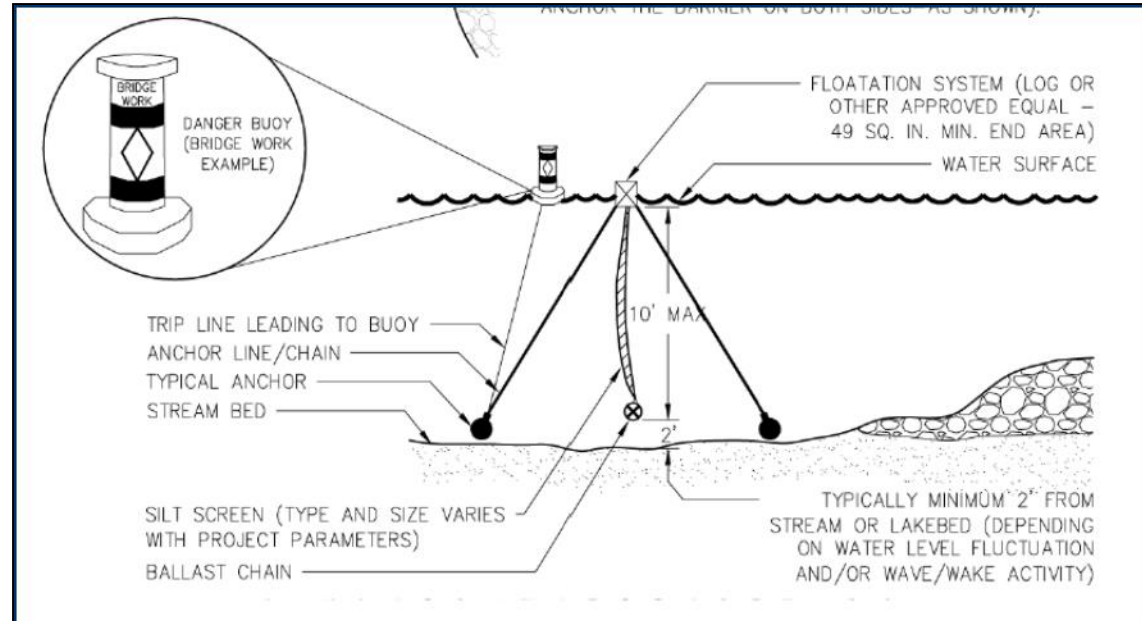
# Chapter 6 New BMPs

Tc



Staked Turbidity Curtains Tc-S

Floating Turbidity Curtains Tc-F



# Chapter 6 New BMPs

Tr

## Tree Protection (Tr)

- ▣ To protect desirable trees from injury during construction activity.

- ▣ Tree Protection Zones:

- (1) Measure the diameter of the tree trunk in inches at 4.5 feet from the ground. This is called the Diameter Breast Height or DBH.
- (2) Multiply this value by 1.5. This result is the diameter of the root protection zone in feet. This is also considered the critical rooting distance.



# Transition Period – Plan Review

- The GSWCC recognizes the need for a transition period to allow individuals time to understand and begin implementing the new requirements.
- As part of this transition period, for a **6 month** period, beginning January 1, 2016 and ending June 30, 2016, GSWCC will recognize the 5<sup>th</sup> and 6<sup>th</sup> Edition of the Manual along with the 2016 edition.
- All plans which were completed and sealed prior to July 1<sup>st</sup> 2016 may utilize the products and practices as specified in the Manual (Fifth and Sixth Editions). These may include previously approved plans with revisions, plans which had not been previously approved but were in the review process, or new plan submittals created prior to July 1<sup>st</sup> 2016. Any plans received on or after July 1<sup>st</sup> 2016, are to utilize the new Manual (2016 Edition).

# “If it’s green, it’s clean”

- **BMPs are used in series to provide a defense against erosion on land disturbance sites using both vegetative and structural measures**





# Questions?

Urban Program  
4310 Lexington Road  
Athens, GA 30603  
706-552-4474

GSWCC Manual - 2016 Edition